Ideas Discussed

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| --- | --- | --- | --- | --- | --- | --- |
|  | Health Band | Streaming Phone OS | Smart Garbage Collection Bin | Course Selection Software | Bike Monitoring System | P2P Network |
| Description | A device similar to watch that measures heart rate, oxygen, temperature | Stream many of the intensive activities of the OS to a separate GPU | Uses 356 clustering algorithms to determine which type of bin to throw trash into. A light will appear on the correct one | Software that recommends courses for a future term using a survey | Sensors and cameras that alert of danger around them | Run intensive applications in a P2P network with no master and no slave |
| Problem | Cost effective health monitoring for home care and retirement home | High cost for tablets and devices for education, and they must be replaced after a while | Garbage is not disposed of properly | Students don’t know the kind of courses they want to take for electives | Bike accidents are very common, and they are vulnerable to injury | Home computing power is going unused |
| Pros | -Resources (Doctors, profs)  -Good mix of hardware and software  -There’s a big market for it | -Cost effective  -Really cheap endpoint devices | -Helps new immigrants/ old people/ blind people dispose properly  -Helps the environment by properly throwing stuff out  -Image recognition and classification already done |  | -Warning light on each side of the bike to warn of danger |  |
| Cons | -Disadvantage with hardware (power efficiency with Arduino)  -The size of the band | -Highly complex  -Legal issues with the carrier  -Legal issues with VOIP in other countries | -We need to get malls to agree with our idea  -Perhaps too simple |  | -No easy way to demo it  -We need to agree on a good solution |  |
| Software | -Data on the band sent to backend  -Communication method (Bluetooth, wifi)  -Machine learning model to analyze data in real time  -Android/iOS app for pretty display and alerts | -A basic OS on the phone |  |  | -Image recognition software to detect vehicles, bikes, pedestrians |  |
| Hardware | -Wifi/Bluetooth module  -Heartbeat, temperature and oxygen sensor  -Microcontroller  -Battery | -High quality wifi  -Raspberry Pi  -Backend server with GPU | -Camera(s) on the garbage can  -LED lights to open the bin | None | -Cameras (a few)  -Sensors to detect distance  -IR sensor for night |  |
| Difficulty | 8/10 | 9/10 | 6/10 | 7/10 | 8/10 | 10/10 |
| Ranks | 1,1,1,2,2 | 2,2,2,1,1 |  |  |  |  |
| Sum | 8 | 7 |  |  | 13 | 12 |
| Profs | Nachiket, Anurag’s profs | Nachiket, |  |  |  |  |